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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,278	10/22/2003	Michael J. Wookey	30014200-1101	4919

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EXAMINER

HICKS, MICHAEL J

ART UNIT	PAPER NUMBER
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2165

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/22/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/691,278	Applicant(s) WOOKEY, MICHAEL J.	
	Examiner Michael J. Hicks	Art Unit 2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-22 Pending.

Response to Arguments

2. Applicant's arguments, see response, filed 10/13/2006, with respect to the rejection(s) of claim(s) 1-22 under USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Wolters (U.S. Patent Number 7,107,339).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-22 rejected under 35 U.S.C. 102(e) as being anticipated by Wolters (U.S. Patent Number 7,107,339).

As per Claims 1, 8, 15, and 22, Wolters discloses a method in a data processing system having a program, computer readable medium, and data processing system the method comprising the steps performed by the program of: generating a dataset having at least one exposure level to failure of a computer-based system a description (i.e.

"Embodiments of the present invention combine measurements from numerous monitors. These monitors collect data from a number of components and subcomponents of an enterprise's IT infrastructure, and provide the data regarding each of the components. Using the combined measurements, historical values of the monitors, and statistical analysis, embodiments of the present invention can predict that the IT infrastructure will not perform up to specification in the future. If the IT infrastructure is already not performing up to specification, embodiments of the present invention can suggest possible problems causing the out-of-compliance condition, and may even suggest solutions to those problems. This may be accomplished by using combined measurements and statistical analysis in a process herein referred to as "fingerprinting." As used in this description, a fingerprint is synonymous with the term "indicator set," a more general if somewhat less colorful term...The measurements received from the monitors may be in various forms and formats. A measurement may be raw data such as "memory utilization 70 percent." The measurement may be statistically or otherwise preprocessed. The measurement may also be a monitor state. Such a state may be binary, e.g., "computer on/off-line," or graduated, e.g. "CPU usage high/medium/low." Other states are also possible, such as trend indicator states, for example, "CPU usage increasing/decreasing." Statistical states may also be used, such as "CPU usage outside normal range."" The preceding text excerpt clearly indicates that datasets are generated and collected which indicate at least one exposure level to failure (e.g. degrees of memory utilization, on/off states, etc. which indicate how close to failing a component may be according to a gross level rule) for a given component in a computer based system.) (Column 2, Lines 49-67; Column 5, Lines 25-34) and a corresponding rule identifier of a rule used to calculate the exposure level (i.e. *"The specifications for an IT infrastructure may be provided in terms of gross-level rules. A gross-level rule, such as a business rule, indicates the expected or desired functioning of the IT infrastructure. For example, a gross-level rule may*

Art Unit: 2165

specify a maximum or average response time for a web server request. Another gross-level rule may similarly specify the number of order lines that should be processed per second. Other gross-level rules may give constraints on transaction throughput. There are many other various gross-level rules, some of which may be unique to the enterprise whose IT infrastructure is being monitored. The IT infrastructure may be said to be functioning according to specification if all, or at least a certain minimum number, of the gross-level rules are in compliance. If a gross-level rule is not in compliance, corrective action may be desired. An actual monitoring system according to embodiments of the present invention may consider all gross-level rules. However, for simplicity, only compliance with one gross-level rule is considered in the following discussion. Also, since not all components are related to all gross-level rules, the following discussion assumes that a gross-level rule has been selected for analysis, and that the components and subcomponents that may affect the gross-level rule have been identified." The preceding text excerpt clearly indicates that the exposure levels are based on gross level rules and that the component-rule relations which the dataset describes are defined. This indicates that the dataset includes a rule-identifier that links the data to the gross-level rule.) (Column 4, Lines 56-67; Column 5, Lines 1-12), the rule asynchronously receiving information about the computer-based system and calculating the exposure level based on the received information (i.e. *"Once the components that are relevant to a gross-level rule are identified, an indicator set for the gross-level rule can be created. The generation of the indicator set, or fingerprint, is now described with reference to FIG. 3. First, all or a critical number of monitors report their measurements, referred to herein as component metrics, and these component metrics are received 302 at the Indicator Engine. These measurements may be timestamped or synchronized, if temporal measurement synchronization is desired. The measurements may be collected periodically. There may be numerous triggering events to be used to commence the fingerprint creation process."* The preceding text excerpt clearly indicates that the information reception and processing is only synchronized when it is desired to synchronize the procedure, thus the default operating condition would be asynchronous.) (Column 5, Lines 13-24); comparing the generated dataset to a previously generated dataset by comparing the at least one exposure level

Art Unit: 2165

of the dataset to an at least one exposure level with the same rule identifier in the previously generated dataset (i.e. *"When the raw monitor measurements, i.e., component metrics, are collected, each component metric may be compared 304 with historical values or statistics for the component metrics."* The preceding text excerpt clearly indicates that exposure levels (e.g. component metrics) are compared with historical values (e.g. previous datasets) for the same component-rule relation.) (Column 5, Lines 35-38), the previously generated dataset being associated with a known problem with the computer-based system (i.e. *"The historical indicator sets may have been generated at some time in the past, and may be stored in some memory element or database somewhere in the IT infrastructure or the Indicator Engine. The historical indicator set may be associated with one or more problems that existed at the time the historical indicator set was generated. Also, a historical indicator set may be associated with one or more fixes or solutions that were used at the time the historical indicator set was generated. For example, if the historical fingerprint was generated when the gross-level rule was out of compliance because a particular memory unit was overloaded, the historical fingerprint may now be associated with the memory unit being overloaded. Furthermore, if in the past reconfiguring a router eased the memory unit's loading, this fix may also be associated with the historical fingerprint."* The preceding text excerpt clearly indicates that the previously generated dataset may be associated with a know problem that was previously experienced in the computer based system.) (Column 6, Lines 59-67; Column 7, Lines 1-6); and calculating the probability of a problem with the computer-based system based on a number of exposure levels in the generated dataset matching exposures levels in the previously generated dataset (i.e. *"In a complex IT infrastructure, the CPU monitor alone would not indicate the critical nature of the CPU to the gross-level rule. Alternatively, the CPU may not even be monitored. However, since embodiments of the present invention consider numerous monitors, the crashed CPU may create recurring monitor patterns even without being directly monitored. Thus, in this example, if the two fingerprints match--meet the resemblance condition,--then the problem that the CPU has again crashed will be inferred. If more than*

Art Unit: 2165

one problem is associated with a given fingerprint, the problems may be ranked according to some statistical likelihood of reoccurrence....Some embodiments of the invention that may predict a future out-of-compliance condition before it occurs are now described with reference to FIG. 6. Since, the gross-level rule is not yet out of compliance at the time the monitor data is collected, these embodiments may be used to predict whether the gross-level rule is approaching an out-of-compliance condition. In one embodiment of the invention, the prediction process is periodically performed for each gross-level rule. Thus, the prediction process according to one embodiment of the invention may begin with the selection 602 of a particular gross-level rule. Then, an indicator set for the selected gross-level rule may be generated 604 in any of the ways described above with reference to FIG. 3. Next, the indicator set is compared 606 to historical indicator sets in the manner described with reference to FIG. 4. As discussed with reference to FIG. 4, the comparison 606 determines whether there is sufficient resemblance between the indicator set and at least one historical indicator set. This resemblance condition may be different from the resemblance condition used above with reference to FIG. 4, or it may be the same resemblance condition. The historical indicator sets may have been generated at a time when the gross-level rule was out of compliance. If the indicator set does not sufficiently resemble any of the historical indicator sets, then no prediction is made about the gross-level rule. The process may begin again by a selection 602 of another gross-level rule. However, if the indicator set does match, i.e., sufficiently resemble, a historical fingerprint, then it is predicted that the IT infrastructure may soon experience an out-of-compliance condition regarding the gross-level rule. That is, it is predicted 608 that the gross-level rule may soon be out of compliance. In one embodiment of the invention, the monitoring system may then infer 610 potential problems, fixes, or solutions associated with the particular historical fingerprint or fingerprints, similar to the process described with reference to FIG. 4." The preceding text excerpt clearly indicates that depending on the number of exposure levels matching with the historical data, that possible problems are indicated and that if multiple possible problems are indicated that the likelihood of each problem is also indicated. Also note that because the likelihood of problems are generated statistically, they will be represented as probabilities.) (Column 7, Lines 41-52; Column 9, Lines 59-67; Column 10, Lines 1-28).

As per Claims 2, 9, and 16, Wolters discloses outputting the determination of the calculated probability of a problem (i.e. *"In the illustrated embodiment, a determination is made 410 as to whether the problem inferred was actually correct. This determination may be performed by a technician or in some automated manner."* The preceding text excerpt clearly indicates that it may be determined by a technician if the problem inferences (e.g. the problems and their associated probabilities) were correct. In order for a technician to receive the information to make the determination, the information must be output.) (Column 7, Lines 61-64).

As per Claims 3, 10, and 17, Wolters discloses the output includes a description of the problem (i.e. *"In the illustrated embodiment, a determination is made 410 as to whether the problem inferred was actually correct. This determination may be performed by a technician or in some automated manner."* The preceding text excerpt clearly indicates that it may be determined by a technician if the problem inferences (e.g. the problems and their associated probabilities) were correct. In order for a technician to receive the information to make the determination, a description of the problem must be output.) (Column 7, Lines 61-64).

As per Claims 4, 11, and 18, Wolters discloses that the exposure level comprises an exposure level multiplied by a confidence level of the exposure level, the confidence level having a value that increases each time the corresponding rule calculates the exposure level (i.e. *"If more than one problem is associated with a given fingerprint, the problems may be ranked according to some statistical likelihood of reoccurrence. For example, if a certain problem has occurred ten times, and each time a fingerprint resembling a historical fingerprint was generated, then that problem is more likely to have reoccurred than a problem that only occurred three times in a similar*

Art Unit: 2165

situation. Furthermore, if more than one historical fingerprint matches the fingerprint, the problems associated with those fingerprints may also be ranked according to some statistical likelihood." The preceding text excerpt clearly indicates that the exposure levels are weighted according to a confidence value (e.g. a value which increases each time an exposure level is calculated/encountered).) (Column 7, Lines 49-60).

As per Claims 5, 12, and 19, Wolters discloses the computer-based system is at least one of a data processing system, a component of a data processing system, and a computer program (i.e. *"Embodiments of the present invention combine measurements from numerous monitors. These monitors collect data from a number of components and subcomponents of an enterprise's IT infrastructure, and provide the data regarding each of the components."* The preceding text excerpt clearly indicates that the computer based system is components of a computer based system.) (Column 2, Lines 49-53).

As per Claims 6, 13, and 20, Wolters discloses that the information about the computer related system is received by subscribing to the information (i.e. *"An information technology (IT) infrastructure may be monitored, and the data thus collected may be used to infer problems and predict future conditions....Embodiments of the present invention combine measurements from numerous monitors. These monitors collect data from a number of components and subcomponents of an enterprise's IT infrastructure, and provide the data regarding each of the components."* The preceding text excerpt clearly indicates that monitors are set up to collect the information about the computer based system. Assigning monitors specifically to collect the information can be considered to be a form of subscription to that information.) (Column 2, Lines 7-9, 49-53).

As per Claims 7, 14, and 21, Wolters discloses the received information comprises at least one of fault information, hardware configuration information, and software configuration information about the computer-based system (i.e. *"Using the combined measurements, historical values of the monitors, and statistical analysis, embodiments of the present invention can predict that the IT infrastructure will not perform up to specification in the future. If the IT infrastructure is already not performing up to specification, embodiments of the present invention can suggest possible problems causing the out-of-compliance condition, and may even suggest solutions to those problems."* The preceding text excerpt clearly indicates that the information may be considered to be either fault or hardware configuration information.) (Column 2, Lines 52-61).

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Hicks whose telephone number is (571) 272-2670. The examiner can normally be reached on Monday - Friday 8:30a - 5:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2165

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